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Analysis of Serum Cytokines and Single-Nucleotide Polymorphisms of SOD1, SOD2, and CAT in Erysipelas Patients

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Abstract

© 2017 Charles C. Emene et al. Increased free radical production had been documented in group A (β-hemolytic) streptococcus infection cases. Comparing 71 erysipelas patients to 55 age-matched healthy individuals, we sought for CAT, SOD1, and SOD2 single polymorphism mutation (SNPs) interactions with erysipelas' predisposition and serum cytokine levels in the acute and recovery phases of erysipelas infection. Whereas female patients had a higher predisposition to erysipelas, male patients were prone to having a facial localization of the infection. The presence of SOD1 G7958, SOD2 T2734, and CAT C262 alleles was linked to erysipelas' predisposition. T and C alleles of SOD2 T2734C individually were linked to patients with bullous and erythematous erysipelas, respectively. G and A alleles of SOD1 G7958A individually were associated with lower limbs and higher body part localizations of the infection, respectively. Serum levels of IL-1β, CCL11, IL-2Rα, CXCL9, TRAIL, PDGF-BB, and CCL4 were associated with symptoms accompanying the infection, while IL-6, IL-9, IL-10, IL-13, IL-15, IL-17, G-CSF, and VEGF were associated with predisposition and recurrence of erysipelas. While variations of IL-1β, IL-7, IL-8, IL-17, CCL5, and HGF were associated with the SOD2 T2734C SNP, variations of PDFG-BB and CCL2 were associated with the CAT C262T SNP.

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